



# Maxi 20

Environmental Sewage Systems

1800 808 135

# MAXI 20 DESIGN CALCULATIONS

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**PROPOSED INFLUENT QUANTITIES/QUALITIES AVERAGE**  
**FLOW RATE: 3000 litres per day** **MAXIMUM FLOW RATE:**  
**4500 litres per day**

150 litres per person per days average

$$20 \times 150 = 3000$$

Maximum: 225 litres per person

$$20 \times 225 = 4500 \text{ litres/day}$$

**BOD<sub>5</sub>** 150 – 300 mg/L

**SS** 150 – 300 mg/L

**Total Nitrogen Total** 20 – 100 mg/L

**Phosphorous** 10– 25 mg/L

## PROPOSED EFFLUENT QUALITY

**BOD<sub>5</sub>** <20 mg/L

**SS** <30 mg /L

**Free Chlorine** >0.2 & <2.0 mg/L

**Thermotolerant  
Coliforms** <30 cfu/100ml

## SEPTIC SECTION: 7000 LITRES

1550 sludge allowance + (150 x N) N =  
Number of persons  
1550 + (150 x 20)  
1550 + 3000  
4550 litres capacity

## SUPPLIED CAPACITY 7000 LITRES

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### AERATION:

VOLUME: 6000 litres  
250 litres per person  
250 x 20  
5000 litres

## SUPPLIED CAPACITY 6000 LITRES

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AIR SUPPLY: 200 litres per minute  
8 litres per person per minute  
8 x 20  
160 litres per minute

## SUPPLIED CAPACITY 200 LITRES PER MINUTE

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DIFFUSERS: 1600 mm  
1 x 300 mm per 5 persons  
4 x 300 mm diffusers  
  
1200 mm

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SUPPLIED 8 X 200MM TOTALLING 1600MM

**GROWTH MEDIA:**

5 square metres per person  
5 x 20 = 100 square metres

**SUPPLIED 160 SQUARE METRES**

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**CLARIFIER:**

0.42M2 / 500 litres capacity

**CHLORINATION:**

Twin Chlorine Bath  
200 gram trichlor tablets

**CHLORINE DETENTION:**

Half hour detention time  
4500 litres /10 hours  
450 / hour  
225 litres

**SUPPLIED 500 LITRES**

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**IRRIGATION:**

As per site evaluation report

# MAXI 20 SPECIFICATIONS

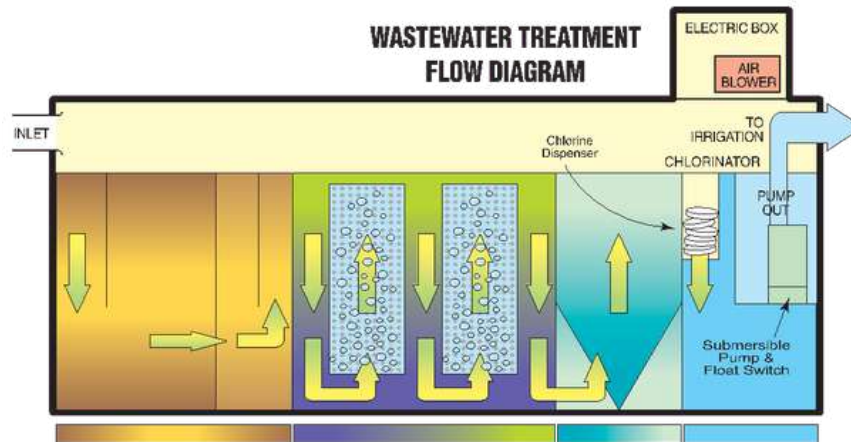
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Description	Specification
Number of persons	20 EP
Tanks	2 x 7000 litre Econocycle Tanks
Blower	200 litres per minute
Irrigation Pump	1 Orange SP334
Septic Section	7000 litres tanks
Aeration Section	7000 litres of aeration divided into three sections
Media	Tasman Cooling Towers CF1900 160m <sup>2</sup> (8 packs x 500 x 800 x 800mm)
Diffusers	8x200mm 25 OD Inglewood Technologies
Chlorinator	2 Chlorine canister

## TECHNICAL PROCESS DESCRIPTION

This is a general breakdown of our wastewater treatment unit.

The wastewater unit works on the combined principles of primary settling plus aerobic and tertiary treatment.



As you can see in the above diagram all your household wastewater and effluent enters the tank through the inlet shown here on the left side of tank.

This settles into the septic zone (identified by the orange & yellow shaded area).

Towards the top of the baffle wall which separates the septic and aeration compartments, there is an outlet which enables the effluent to trickle into the aeration / treatment zone. The aeration / treatment zone is the blue shaded area of the diagram.

From this, the effluent is filtered over a mass of growth media plates. The growth media acts as a bacteria-breeding ground, which sounds quite nasty but is actually a very important and proficient function of the wastewater unit.

The growth media (illustrated as the grey checked areas) enables the bacteria to break down.

Once the organic impurities have been absorbed within the aerobic culture of microorganisms, the water passes to the clarification zone. At this stage the water has been recycled into clean, clear, odorless water.

The clarification zone is the secondary sedimentation process.

Before the water is released from the tank it is circulated through the chlorinator. The chlorinator is as the name suggests – a chlorine based chamber that acts as a final back up and safeguard to catch and kill any nasties that may have escaped through the aeration and clarification processes.

# Drawings – Maxi 20

